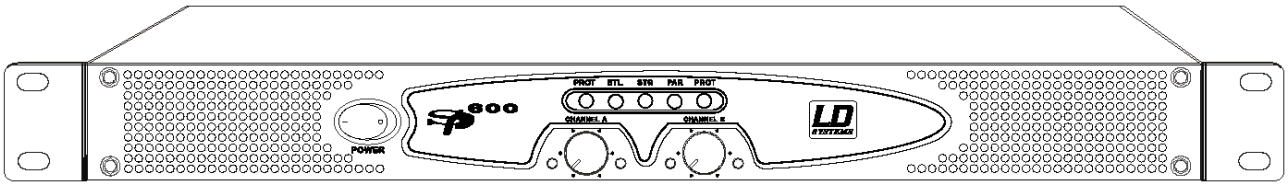
Professional Power Amplifier

SP Series

SP-600

USER MANUAL

Thank you for buying LD-Systems Audio product. To take full advantage of this product, please keep this manual and read the operating instructions carefully.



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1. Safety Instructions

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
Caution: to reduce the risk of Electric shock, do not remove cover(or back). No user-serviceable parts inside. Refer servicing to qualified service personnel.

The lighting flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated “dangerous voltage “within the product’s enclosure that may be of sufficient magnitude to constitute a risk to persons.

The exclamation point, within an equilateral triangle, is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

1.) Caution: Avoid the risk of electric shock, do not remove the cover. No user serviceable parts inside.
2.) To prevent fire or shock hazard, do not expose the unit to rain or moisture. Do not place metal objects or spill liquid inside the unit; electric shock or malfunction may result.
3.) Don’t cover any ventilation slots as this may result in overheating. Always install the unit in a well ventilated place. Avoid presence of heat sources, and avoid dusty and humid environments.
4.) Do not repair the unit by yourself. Checks or repairs of the unit must be made by qualified personnel only.

2. Main features

Professional power amplifiers with advanced switch mode power supply technology for higher performance. Perfect for Public address. discotheques, clubs, theatres, etc.

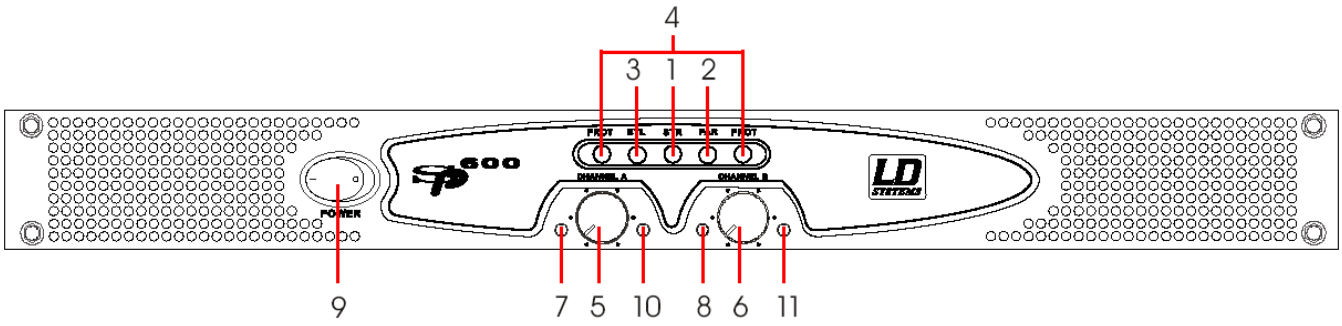
The amplifiers feature:

- Soft start up
- Automatic voltage/ current limiter
- Short circuit protection
- DC fault protection
- High temperature protection
- Overloaded protection
- Selectable operation modes : Stereo, bridge & parallel
- Neutrik Combo Input connector and Speakon output connector.
- Power, Protect, Limit, Signal, Stereo, BTL (Bridge), & PAR (parallel) indicators.

3. Precaution

1) Make sure the mains power of the unit is turned off before installation.
2) Make sure the mains supply matches to the unit's rated voltage.
3) Use an adequate power source; do not turn on several amplifiers at the same time.
4) Make sure all the connectors are well connected in their indicated position firmly.
5) Before switching on the power, please check carefully if the mode switch is in its correct position – stereo, bridge, or parallel.
6) Set the input sensitivity (volume) controls to the left before you turn on the power.
7) If the amplifier malfunctions, switch it off immediately. Do not attempt to repair it by yourself, contact your dealer for service.

4. Front panel



1）STR/Stereo LED (Blue)

Indicates that the amplifier is working in Stereo mode.

2）PAR/Parallel LED (Blue)

Indicates that the amplifier is working in parallel mode. In parallel mode, you have to apply the signal only to the CHA (Channel A) input of the amplifier. The signal input is from CHA, but the signal outputs are same as in Stereo mode, i.e. from CHA & CHB outputs, connecting to two speakers.

3）BTL/Bridge LED (Blue)

Indicates that the amplifier is working in bridge mode. This means that both channels are switched together in series to act as mono amplifier. The output power is almost three time of that compared to the separate channels. In bridge mode, you have to apply the signal only to CHA input of the amplifier.

4）PROT (Protect) / YELLOW

The LED will be on under the following 3 conditions:

4-1）During first few seconds after switching on/off the amplifier the LED is on.

4-2）When the temperature of the power stage becomes too high.

4-3）In case of a technical defect : DC protection.

5/6.) CHA (Channel A) / CHB (Channel B) Input Level Control (Volume)

These potentiometers are used to control the input volume of the amplifier. In bridge or parallel mode, only CHA (Channel A) is active.

7/8.) Power and CHA / CHB Signal indicators:

First LED around the input level control potentiometer is the Power indicator. This lights up when the power is on.

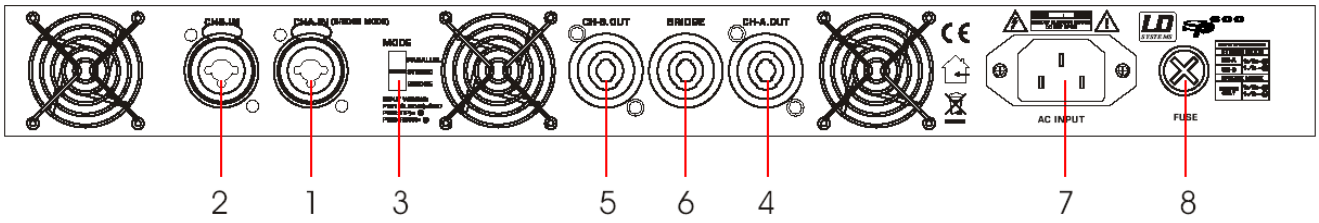
9）Power switch

When switching on the power, it takes about 3~ 4 seconds to complete the soft start-up function, the amplifier is then ready to work.

10/11) LIMIT LED: When the input signal voltage is too high, the limit LED will be on.

The limiter reduces the average input level when the signal begins to distort; this process is designed to reduce distortion and protect the speakers. Please reduce the signal input level when the LIMIT LED is on.

5. Rear Panels



1/2.) CHA/CHB input Combo connectors :

Combination of 3-pin XLR & 6.35 (1/4”) JACK connectors.

Pin 1：Ground / Pin 2：Signal + / Pin 3：Signal -

3） Mode Switch: The amplifier is shipped in “ Stereo “ mode.

You can select between Stereo, Bridge, or Parallel mode.

STR/ Stereo Mode: You have to connect the input and output of both channels.

BTL/ Bridge Mode: The input signal must be applied to CH A only.

PAR/ Parallel Mode: The input signal must be applied to CH A only.

4） CHA output

5） CHB output

6) Speakon Output for bridge mode

7) AC power cord for mains power input

8） FUSE：F10A/250V

6．Connections (Signal Input）

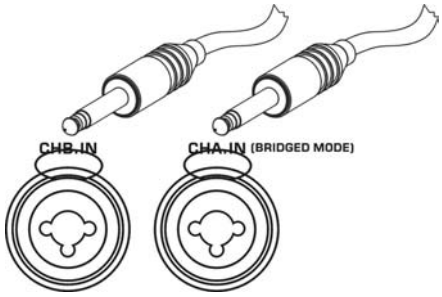
1）Unbalanced wiring:

Photo 1- Signal input using a 1/4” mono Jack

CHA & CHB signal input:

Use a mono jack- Tip = signal

Sleeve= ground



Photo（1）

For balanced wiring, you can also use a 1/4” Stereo Jack.

2）Balanced wiring:

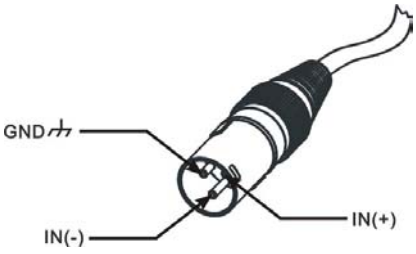
Photo 2 – Signal input using an XLR connector

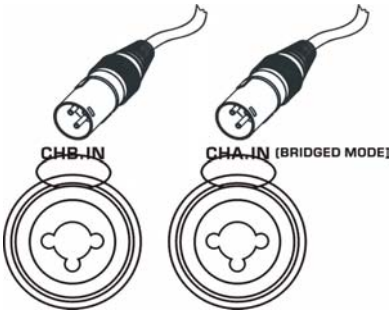
CHA & CHB Signal input：

Pin1= Ground

Pin 2= Signal +

Pin 3= Signal –





Photo（2）

Note：Incorrect connection will result in malfunction. Make sure the connection is correct before operation.

7. Connection（Signal output）

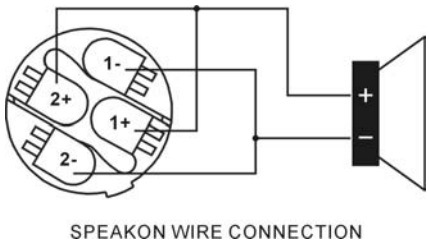
1）Stereo Mode

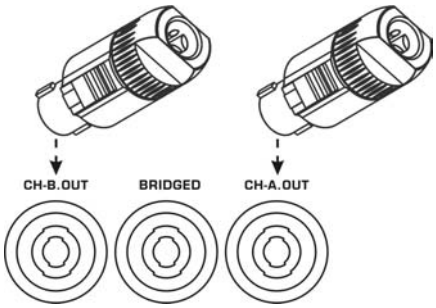
Photo 4- Signal output using Speakon connector

CHA & CHB signal output：

1+、2+ Signal output （+） connect to speaker (+）

1-、2- Signal output （-） connect to speaker (-)





Photo（4）

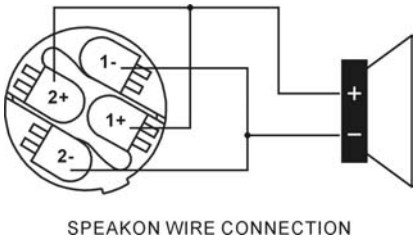
2）Bridge mode

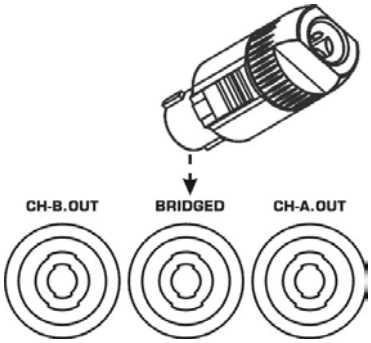
Photo 5- Signal output using Speakon connector

Be sure to set the mode switch on the rear panel to “ bridge “ (BTL).

1+、2+ Signal output （+） connect to speaker (+）

1-、2- Signal output （-） connect to speaker (-)





Photo（5）

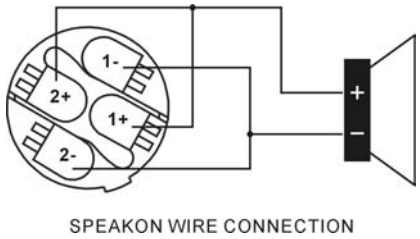
3）Parallel Mode

Photo 6- Signal output using Speakon connector

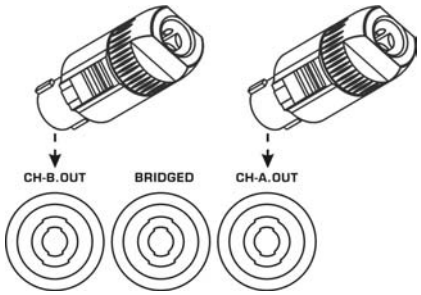
1+、2+ Signal output （+） connect to speaker (+）

1-、2- Signal output （-） connect to speaker (-)

Signal input from CHA, signal output from CHA & CHB.



SPEAKON WIRE CONNECTION



Photo（6）

Note：Incorrect connection will result in malfunction. Make sure the connection & operation mode is correct before switching the power on.

8．General Operation

1、Operation procedures:

1）Connect to the matching speakers

2）Make sure all the input & output connections are correct and well connected

3）Make sure the mains power supply matches to the power indicated on the amplifier.

4）Connect the signal source equipment, eg : Mixer, to the amplifier's signal input

5）Set amplifier's input level (volume) to the minimum

6）Set the mode switch to the required operation mode (stereo, bridge, or parallel).

7）Turn on the power of signal source equipment first (mixer etc…), then the amplifier

8）Adjust the input level (volume) to the intensity you want.

2、Operation procedure of Bridge, Parallel & Stereo mode:

A.) Stereo Mode:

a.) Ensure the amplifier is switched off

b.) Connect speakers to CHA and CHB outputs

c.) Set mode switch to "stereo "

d.) Input signal device to CHA and CHB inputs

e.) Turn on the power of amplifier

f.) Adjust CHA and CHB signal volume

Caution: The amplifier will protect itself if it is used continuously under 2 Ohm stereo at its maximum for long

durations.

B.) Bridge mode:

a.) Ensure the amplifier is switched off
b.) Connect speaker to " bridge " speakon output.
c.) Set mode switch to BTL (bridge).
d.) Input signal device to CHA input
e.) Turn on the power of amplifier
f.) Adjust CHA signal volume.

Caution: The amplifier will protect itself if it is used continuously under 4 Ohm bridge for long durations.

C.) Parallel mode:

a.) Ensure the amplifier is switched off
b.) Connect speakers to CHA and CHB outputs (as is stereo mode)
c.) Set mode switch to PAR (Parallel)
d.) Input signal device to CHA input
e.) Turn on the power of amplifier
f.) Adjust CHA input volume control only for the output volume of CHA & CHB.

Caution: The amplifier will protect itself if it is used continuously under 2 Ohm parallel for long durations.

9. Maintenance

1. Clean the unit by wiping with a slightly damp cloth. Avoid getting water inside the unit. Do not use alcohol or any volatile liquid that will damage the unit.
2. Clean the ventilation slots regularly with a vacuum cleaner. This increases the cooling capacity of the amplifiers fans and helps preventing temperature overheat.

10．Troubleshooting

You can check some operation problems as mentioned below first before asking for help.

Problem	Problem cause(s)	Suggested remedy
No response when power on	1、Power did not turn on	1、Turn on the power.
	2、Loose connection of the power cord	2、Make sure the power cord is connected firmly to the mains supply before turning on the power of amplifier.
	3、blown fuse	3、Turn off the power, then check the fuse on the rear panel. Replace the fuse with same type only if the fuse is blown.
No sound	1、No signal input	1、Connect the signal source equipment to the amplifier, then turn on the power.
	2、Loose connection of the speaker or damaged speaker	2、Make sure the speaker is well connected. Check if the speaker is in good condition.
	3、Wrong connection	3、Make sure the connection between amplifier and speaker is correct. Please refer to the point 8 Connection (signal output) for more information.
	4、Thermal protection	4、Avoid overloading the amplifier for a long time, or working in a badly ventilated area. Check if the fans work properly and the ventilation slots are clear of dust.
Inadequate output volume	1、The signal input level (ivolume) is set at minimum	1 、Adjust the signal input level to the appropriate intensity
	2、Low output of the signal source equipment (CD player)	2、a. Increase the output of the signal source equipment b. Adjust the input sensitivity of the amplifier.

11. Specification

Model No.			SP-600				
Output Power 1KHZ THD+N≤0.1%	Stereo 8Ω		300W x 2				
	Stereo 4Ω		550W x 2				
	Stereo 2Ω		850W x 2				
	Bridge 8Ω		1000W				
	Bridge 4Ω *		1400W				
	Parallel 8Ω		270W x 2				
	Parallel 4Ω		520W x 2				
	Parallel2Ω *		700W x 2				
Frequency Response		20Hz~20KHz±0.5dB					
Input Sensitivity		0.775V/1.0V/1.44V					
S/N ratio (A Weighted RMS)		>100dB					
Crosstalk at rated power output (8Ω1KHz)		>85dB					
Damping Factor (f=1kHz 8Ω)		>200					
Protection		Soft start up, Thermal cut off、Short Circuit、Overloaded、DC fault、Voltage limiter, AC line fuse					
Indicators		Power、Signal、Protect、Limit、Stereo、Bridge、Parallel					
Connectors		INPUT: NEUTRIK COMBO x 2; XLR Link male x 2; OUTPUT: NEUTRIK Speakon x 3					
Cooling system		Low noise, variable speed fans					
Power supply		230V ~ 50Hz					
Dimension（W×D×H)/Weight		483 x 499 x 44 mm		10,3kg			

*** Important note: We do not recommend a 2 Ohms stereo or a 4 Ohms bridge mode operation under full load conditions!**

Warranty

Adam Hall warrants its products to be free of all detectable flaws in material and workmanship for a period of 24 (twenty-four) months from the date of sale. Any and all damage caused by misuse or improper use shall be excluded from warranty. Tampering by outside parties or unauthorized modifications shall render any and all warranties null and void.

English

Correct Disposal of This Product (Waste Electrical & Electronic Equipment)

(Applicable in the European Union and other European countries with seperate collection systems)

This marking shown on the product or its literature, indicates that it should not be disposed with other household wastes at the end of its working life. To prevent possible harm to the environment or human health from uncontrolled waste disposal, please seperate this from other types of wastes and recycle it responsibly to promote the sustainable reuse of material resources.

Household users should contact either the retailer where they purchased this product, or their local government office, for details of where and how they can take this item for environmentally safe recycling.

Business users should contact their supplier and check the terms and conditions of the purchase contract. This product should not be mixed with other commercial wastes for disposal.